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Fourth Monthly Progress Report

Design and Fabrication of Variable Anamorphic Viewing System

Period March 1, 1966 to April 1, 1966

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Work on the detailed design of the prism anamorphic system has continued during this period. As the design approaches completion, the approximate final size of the prisms can be determined. These are so small that there was some question as to whether they could be manufactured. Consequently, the problem was presented to representatives of the manufacturing division of the company. They felt the problem was difficult, but have now worked out a technique that will permit straightforward manufacture.

As the design approaches completion it has been found increasingly difficult to maintain overall length without mechanical interference of the prisms at maximum tilt. Reduction in field size permits reduction in prism width, and solves the mechanical interference problem. Thus, there is an indication that some reduction in field may be required, but this is not as yet a certainty, and in no case will the field be smaller than 85% of full field.

The eyepiece tubes of the Zoom 70 have an angle of convergence. With the four inch extension of the eyepoint by the anamorphic eyepiece the minimum interpupilary distance becomes roughly 70mm. To correct this situation it is necessary to bend the anamorphic eyepiece enough to make the upper portions of the unit parallel when mounted in the Zoom 70. In previous units this bending was accomplished with a small achromatic wedge which introduced a small amount of chromatic aberration. In the present case it has been found possible to modify the design of the

lower Pechan prism so that it deviates the beam the required amount. Since this deviation is achieved by reflection rather than refraction there will be no problem with chromatic aberration.